January 23, 2019

East Chicago Sanitary District
5201 Indianapolis
East Chicago, IN 46312

Work Order No.: 19A0787

Re: Industrial #901 011519

Dear Nickie Geros:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 1/16/2019 1:09:00PM for the analyses presented in the following report as Work Order 19A0787.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

Dave Bryant
Project Manager

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WORK ORDER SAMPLE SUMMARY

Date: *Wednesday, January 23, 2019*

Client: East Chicago Sanitary District
Project: Industrial #901 011519
Lab Order: 19A0787

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19A0787-01	#901		01/15/2019 10:10	1/16/2019 1:09:00PM
19A0787-02	#901		01/15/2019 10:10	1/16/2019 1:09:00PM

Samples Subcontracted To: ALS USA MI, Corp. - Holland, MI

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19A0787-02	#901		01/15/2019 10:10	1/16/2019 1:09:00PM

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Analytical Results

Date: *Wednesday, January 23, 2019*

Client: East Chicago Sanitary District
Client Project: Industrial #901 011519
Client Sample ID: #901
Sample Description:
Matrix: Aqueous

Work Order/ID: 19A0787-01
Sampled: 01/15/2019 10:10
Received: 01/16/2019 13:09

Analyses	Certs	AT	Result	Limit	MDL	RL	Qual	Units	DF	Analyzed
			Method: **EPA 200.7 Rev 4.4**							Analyst: **BTM**
Total Recoverable Metals by ICP										Prep Date/Time: **01/18/2019 08:12**
Arsenic	dijl	A	***0.0097***	0.5	0.0053	0.010	J	mg/L	1	01/18/2019 13:17
Chromium	dijl	A	***0.0041***	0.282	0.0011	0.0030		mg/L	1	01/18/2019 13:17
Copper	dijl	A	***0.010***	0.17	0.0013	0.010		mg/L	1	01/18/2019 13:17
Lead	dijl	A	***ND***	0.224	0.0033	0.0075		mg/L	1	01/18/2019 13:17
Molybdenum	dijl	A	***0.051***	0.2	0.0066	0.020		mg/L	1	01/18/2019 13:17
Nickel	dijl	A	***0.013***	0.39	0.0010	0.010		mg/L	1	01/18/2019 13:17
Thallium	dijl	A	***ND***	4.3	0.0040	0.050		mg/L	1	01/18/2019 13:17
Zinc	dijl	A	***0.24***	5.5	0.0073	0.020		mg/L	1	01/18/2019 13:17
			Method: **EPA 245.1 Rev 3.0**							Analyst: **BTM**
Total Mercury by CVAA										Prep Date/Time: **01/22/2019 08:22**
Mercury	dil	A	***ND***	0.0002	0.000093	0.00020		mg/L	1	01/22/2019 11:18
			Method: **SM 4500-Cl B-1997**							Analyst: **DMM**
Chloride										Prep Date/Time: **01/17/2019 12:45**
Chloride	di	A	***170***	0	1.0	1.0		mg/L	1	01/17/2019 13:48
			Method: **EPA 410.4 Rev 2.0**							Analyst: **AMR**
Chemical Oxygen Demand										Prep Date/Time: **01/22/2019 09:24**
Chemical Oxygen Demand	di	A	***1200***	250	9.3	10	*	mg/L	1	01/22/2019 12:49
			Method: **SM 4500-F C-1997 MOD**							Analyst: **EF**
Fluoride										Prep Date/Time: **01/18/2019 14:34**
Fluoride	dij	A	***1.1***	2.9	0.010	0.10		mg/L	1	01/18/2019 14:34
			Method: **EPA 350.1 Rev 2.0**							Analyst: **ABG**
Nitrogen, Ammonia as N										Prep Date/Time: **01/18/2019 08:00**
Nitrogen, Ammonia (As N)	di	A	***29***	77	0.11	0.20		mg/L	1	01/18/2019 11:05
			Method: **EPA 365.1 Rev 2.0**							Analyst: **ABG**
Total Phosphorus as P										Prep Date/Time: **01/21/2019 09:10**
Phosphorus, Total (As P)	dij	A	***1.38***	5.5	0.0450	0.200		mg/L	1	01/22/2019 9:42
			Method: **EPA 420.4 Rev 1.0**							Analyst: **ABG**
Total Phenolics										Prep Date/Time: **01/18/2019 09:50**
Phenolics, Total Recoverable	dij	A	***0.072***	0.7	0.0060	0.010		mg/L	1	01/18/2019 14:34
			Method: **SM 4500 SO4 E-1997**							Analyst: **ABG**
Sulfate, Turbidimetric										Prep Date/Time: **01/22/2019 09:40**
Sulfate		A	***23***	0	0.47	10		mg/L	1	01/22/2019 12:54
			Method: **SM 2540 C-1997**							Analyst: **DAT**
Total Dissolved Solids										Prep Date/Time: **01/18/2019 10:53**
Total Dissolved Solids (Residue, Filterable)	dij	A	***410***	0	20	20		mg/L	1	01/21/2019 16:19
			Method: **SM 2540 D-1997**							Analyst: **KMT**
Total Suspended Solids										Prep Date/Time: **01/18/2019 13:50**

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Analytical Results

Date: *Wednesday, January 23, 2019*

Client: East Chicago Sanitary District
Client Project: Industrial #901 011519
Client Sample ID: #901
Sample Description:
Matrix: Aqueous

Work Order/ID: 19A0787-01
Sampled: 01/15/2019 10:10
Received: 01/16/2019 13:09

Analyses	Certs	AT	Result	Limit	MDL	RL	Qual	Units	DF	Analyzed
				Method: **SM 2540 D-1997**						Analyst: **KMT**
Total Suspended Solids										Prep Date/Time: **01/18/2019 13:50**
Total Suspended Solids	dij	A	***140***	100	1.0	1.0	*	mg/L	1	01/18/2019 15:15

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Analytical Results

Date: *Wednesday, January 23, 2019*

Client: East Chicago Sanitary District
Client Project: Industrial #901 011519
Client Sample ID: #901
Sample Description:
Matrix: Aqueous

Work Order/ID: 19A0787-02
Sampled: 01/15/2019 10:10
Received: 01/16/2019 13:09

Analyses	Certs	AT	Result	Limit	MDL	RL	Qual	Units	DF	Analyzed
				Method: **EPA 1664B**						Analyst: **KMT**
Oil & Grease (HEM) by SPE										Prep Date/Time: **01/18/2019 07:54**
Oil & Grease (HEM)	dij	A	***4.6***	50	1.4	5.0	J	mg/L	1	01/18/2019 14:26
				Method: **EPA OIA-1677**						Analyst:
Available Cyanide (Subcontracted)										Prep Date/Time: **01/15/2019 10:10**
Cyanide, Available			***0.12***	0	0.0024	0.004		mg/l	1	01/21/2019 0:00

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B = Detected in the associated method Blank at a concentration above the routine RL
b- = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL
b* = Detected in the associated method Blank at a concentration greater than half the RL
CFU = Colony forming units
D = Dilution performed on sample
DF = Dilution Factor
g = Gram
E = Estimated Value
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference
J = Analyte concentration detected between RL and MDL (Metals / Organics)
LOD = Limit of Detection
LOQ = Limit of Quantitation
m3 = Meters cubed
MDL = Method Detection Limit
mg/Kg = Milligrams per Kilogram (ppm)
mg/L = Milligrams per Liter (ppm)
NA = Not Analyzed
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
NR = Not Recovered
R = RPD outside accepted recovery limits
RL = Reporting Limit
S = Spike recovery outside recovery limits
Surr = Surrogate
U = Undetected
> = Greater than
< = Less than
% = Percent
* = Result exceeds project specific limits

ANALYTE TYPES: (AT)

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CRL = Client Required Reporting Limit
PDS = Post Digestion Spike
QCS = Quality Control Standard
ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard
SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

[d] Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
[i] Kansas Dept Health & Env. NELAP (#E-10397)
[j] Kentucky Wastewater Laboratory Certification Program (#90147)
[l] North Carolina DENR NPDES effluent, surface water (#597)

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 1.0°C

Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	No
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

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Samples Submitted to: [X] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664 [ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

Number

Instructions on back

Client Name	East Chicago Sanitary District	Project	Industrial Monitoring	Turnaround Time	Report Type
Address	5201 Indianapolis Blvd.	Location	#901	[X] Routine (5 working days)	[X] Results Only [ ] Level II
City, State, Zip	East Chicago, IN 46312	PO #		[ ] RUSH* (notify lab)	[ ] Level III [ ] Level III CLP-like
Contact	Nickie Geros / Henry Padilla	Compliance Monitoring? [ ] Yes [ ] No		(needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone #	219-391-8466	(1)Agency/Program			[X] EDD

Sampled by (PRINT): ECSD Staff Sampler Signature: H Sampler Phone #: 219-391-8466 x240

Send Report via: [ ] Mail [ ] Telephone [ ] Fax (fax #) [X] e-mail (address) ngeros@eastchicago.com / jwojcik@eastchicago.com

* **Matrix Types:** Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW); Other (specify)

** **Preservative Types:** (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	TSS, TDS, Fl, Cl, SO4	Total P, COD, NH4	Phenols	Avail CN (1677)	O&G	As, Cr, Cu, Ni, Mo, Pb, Tl, Zn+Hg			For Lab Use Only
#901 (composite)	WW		X		1-15-19	1010	5	U,1,2,	X	X	X			X			19A0787 -01
#901 (grab)	WW	X			1	1	3	2				X	X				-02

rd Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
W. Bryant	1.16.19 1020	Jenna Oletta	1-16-19 1020
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time
Jenna Oletta	1-16-19 1309		1/16/19 1309

QT 1.4 −0.4 1.0C

Sample temperature upon receipt in degrees C =

19A0787 Dave Bryant East Chicago Sanitary District - East Chicago, IN Industrial #901 011519 01/16/2019

rev. 2/12/15

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